

CLAIMS

What is claimed is:

- 1 1. A method comprising:
 - 2 identifying a second network device at a first network device;
 - 3 sending a message from the first network device to the second network device, the message
 - 4 establishing the identity of any network device between the first network device and the second
 - 5 network device;
 - 6 compiling the established identities to determine the topology of the network.
- 1 2. The method of Claim 1, wherein identifying the second network device comprises
- 2 receiving an address of the second network device from a third network device.
- 1 3. The method of Claim 1, wherein the first network device comprises a plurality of
- 2 network interfaces, the method further comprising selecting an interface to the second device by
- 3 sending a packet from each of the plurality of network interfaces to an address of the second network
- 4 device and selecting an interface that corresponds to any reply received from the second network
- 5 device.
- 1 4. The method of Claim 3, wherein sending a packet from each of the plurality of
- 2 network interfaces comprises sending a PING packet from each of the plurality of network
- 3 interfaces.

1 5. The method of Claim 1, wherein sending the message comprises sending a plurality
2 of messages to the second network device, each message having an incrementally greater time to live
3 until a message reaches the second network device.

1 6. The method of Claim 1, wherein sending the message comprises executing a
2 Traceroute utility at the first network device to determine the route of a packet between the first and
3 second network device.

1 7. The method of Claim 1, further comprising:

2 identifying a third network device at the first network device;
3 sending a message from the first network device to the third network device, the message
4 establishing the identity of any network device between the first network device and the third
5 network device.

1 8. The method of Claim 1, further comprising sending a packet to a third network device
2 to provoke the third network device to identify an address corresponding to a port at which the
3 packet was received and wherein compiling further comprises compiling the identified address.

1 9. The method of Claim 1, further comprising sending a packet to a third network device
2 addressed to a port that does not exist on the third network device in order to provoke the third
3 network device to send an error message to the first network device that identifies an address of the
4 third network device corresponding to the port at which the packet was received and wherein
5 compiling further comprises compiling the identified address.

1 10. A machine-readable medium having stored thereon data representing sequences of
2 instructions which, when executed by a machine, cause the machine to perform operations
3 comprising:

4 identifying a second network device at a first network device;
5 sending a message from the first network device to the second network device, the message
6 establishing the identity of any network device between the first network device and the second
7 network device;
8 compiling the established identities to determine the topology of the network.

1 11. The medium of Claim 10, wherein the instructions for identifying the second network
2 device further comprise instructions which, when executed by the machine, cause the machine to
3 perform further operations comprising receiving an address of the second network device from a
4 third network device.

1 12. The medium of Claim 10, wherein the first network device comprises a plurality of
2 network interfaces, the instructions further comprising instructions which, when executed by the
3 machine, cause the machine to perform further operations comprising selecting an interface to the
4 second device by sending a packet from each of the plurality of network interfaces to an address of
5 the second network device and selecting an interface that corresponds to any reply received from the
6 second network device.

1 13. The medium of Claim 10, wherein the instructions for sending the message further
2 comprise instructions which, when executed by the machine, cause the machine to perform further
3 operations comprising sending a plurality of messages to the second network device, each message
4 having an incrementally greater time to live until a message reaches the second network device.

1 14. The medium of Claim 10, further comprising instructions, when executed by the
2 machine, cause the machine to perform further operations comprising:
3 identifying a third network device at the first network device;

4 sending a message from the first network device to the third network device, the message
5 establishing the identity of any network device between the first network device and the third
6 network device.

1 15. The medium of Claim 10, further comprising instructions which, when executed by
2 the machine, cause the machine to perform further operations comprising sending a packet to a third
3 network device to provoke the third network device to identify an address corresponding to a port at
4 which the packet was received and wherein the instructions for compiling comprise further
5 instructions which, when executed by the machine, cause the machine to perform further operations
6 comprising compiling the identified address.

1 16. A method comprising:

2 identifying a second network device at a first network device;

3 sending a Traceroute message from the first network device to the second network device, to
4 determine addresses of any network device between the first network device and the second network
5 device;

6 compiling the addresses to determine the topology of the network.

1 17. The method of Claim 16, wherein identifying the second network device comprises
2 receiving an identification of the second network device, including its address from a policy server.

1 18. The method of Claim 16, wherein the first network device comprises a plurality of
2 network interfaces, the method further comprising selecting an interface to the second device by
3 sending a PING message from each of the plurality of network interfaces to an address of the second
4 network device and selecting an interface that corresponds to any reply received to the PING
5 message from the second network device.

1 19. The method of Claim 16, wherein the Traceroute message comprises a plurality of
2 messages to the second network device, each message having an incrementally greater time to live
3 until a message reaches the second network device.

1 20. The method of Claim 16, further comprising sending a packet to a third network
2 device addressed to a port that does not exist on the third network device in order to provoke the
3 third network device to send an error message to the first network device that identifies an address of
4 the third network device corresponding to the port at which the packet was received and wherein
5 compiling further comprises compiling the identified address.